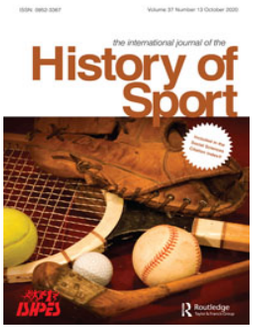

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Planning for Legacy in the Post-War Era of the Olympic Winter Games

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ABSTRACT

Hosting an Olympic Games has the ability to considerably change a city and community, its image and infrastructure, with long-lasting effects in host cities and regions. However, securing long term function of Olympic sites and venues has proven a difficult task, as the increasingly specialist nature and scale of venues pose a major challenge for post-Olympic use. Appropriate planning is sited as central to achieving positive legacies as a result of the games Legacy planning and policy development expanded considerably in the context of the post-war Olympic Winter Games held in Europe between 1948 and 2014. The development of legacy policy and legacy planning have affected the design, construction and legacy of venues throughout the history of the Olympic Winter Games. Through a rigorous horizontal comparative analysis of all post 1948 Olympic Winter Games candidatures and official reports from within Europe, alongside a review of Olympic legacy policy, it is clear that richer understanding of the impact of past Olympic Winter Games policy and planning developments on the built environment benefits both present and future planning.

KEYWORDS

Olympic Winter Games; architectural design; legacy planning; legacy policy; architectural re-use

Since its inception in 1896, the Olympic Games have demonstrated major growth in size and popularity, exacerbated by the ease of access to aviation as a mode of transport and the internationalization of television broadcasting after the Second World War. As the games attained global status over the course of the twentieth century, host cities became a focal point not only for the sporting competitions, but for the festivities that spread beyond the confines of the stadium, with the existing cityscape providing a backdrop to the events. As the infrastructural demands of hosting the games increased, the ability to host Olympic competitions within the existing infrastructure of a city became progressively less viable. As a tendency toward the construction of new Olympic venues and sites began to develop, the games emerged as an opportunity to advance and accelerate the realization of city-

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wide infrastructure projects that would otherwise take much longer, or not be carried out at all.[1] The games became a catalyst for regeneration in dilapidated areas, creating new jobs in the construction sector in the short to medium-term, and improving sports facilities for the benefit of the community in the long-term.[2] The platform of the games provided host cities and nations with the opportunity to demonstrate on the world stage, via the medium of contemporary architecture, their modernity, economic stability, and social cohesion as a nation. The coverage of the games, with the backdrop of existing iconic architecture and newly constructed competition venues, provided the opportunity for host cities to raise their profile and reposition themselves as attractive travel destinations, generating revenue through Olympic tourism. Despite the increasing associated costs of hosting the games, organizers began to leverage the benefits of the event as justification for hosting the competition.[3]

Of the costs for hosting the event, venue construction is one of the most significant expenditures. The venues of the games remain a tangible and omnipresent reminder of its occurrence significantly beyond the 16-day duration of the sporting competition. As the popularity of the games rose, the scale, scope and specificity of venues required to accommodate the competitions increased, and venue legacy became increasingly difficult to secure. By the end of the twentieth century media sources could highlight a number of abandoned, poorly used or disused stadia. As broader global debates around sustainability gathered interest in the late twentieth and early twenty-first centuries, the legacy of Olympic infrastructure gathered significant attention on public and political agendas, amongst event organizers, and in communities. Developing sustainable long-term solutions for Olympic venues became epicentral to the Olympic movement, and authentic efforts to construct and deliver legacies that address public policy priorities emerged in the bidding process.[4] Changes to Olympic policy in the twenty-first century prompted greater consideration for the lifespan of competition venues beyond their initial function. Government agency involvement sought to leverage the games to achieve public policy objectives. Meanwhile, developing an understanding around how bids conceive, include, or impede, the built heritage of the games emerged as imperative.[5] Yet despite a growth in the body of legacy literature, there remains a dearth of much needed research on governmental and organizational efforts toward proactively planning for the creation of event specific benefits for the host community,[6] particularly in relation to the architectural quality and legacy of venues,[7] and in the frequently under-researched winter Olympic context.[8]

Although the specifications for sports venues and terrain are vastly different between the summer and winter Olympic Games, the two events share some characteristics and require much of the same infrastructure.[9] Until 1948, the country hosting the summer Olympic Games also had the opportunity to stage the winter games.[10] However, the two events have vastly different climactic and geographical requirements. Due to fundamental differences in their character, hosting both summer and winter sports in the same city at the same time of year proved problematic. Furthermore, hosting both summer and winter games in the same country at the same time diluted the potential benefit that the games could bring.

After the Second World War, the winter games began to be awarded to a different nation to their summer counterpart, to maximize the profile of the event and explore and exploit the revenue and benefits that hosting the games could bring to a host nation. In 1992, the summer and winter games were switched to separate four-year cycles, alternating on even numbered years.

Since the opportunity to practice winter sports is inherently less practical in some countries and continents, the Olympic Winter Games never attracted the same attention or momentum as their summer counterpart, but there was a steady increase in their popularity and participation over the course of the twentieth century. A number of new sport disciplines and events were incorporated into the winter Olympic programme during this era, which ultimately had an impact on the scale and scope of the infrastructure necessary to host the event.[11] Though a greater number of facilities are required for hosting the summer Olympics, due to the larger number of sport events and participating athletes, the cost per venue for the winter games is often higher owing to the requirement for highly specialized facilities.[12] The construction of venues for the Olympic Winter Games requires considerable financial investment, even in regions that have hosted the event on more than one occasion.[13] Between editions of the games, the introduction of new events to the programme, advances in equipment and technology, and changes to the specifications of competition by the International Federations (IF) solicit new investment and refurbishment of venues.[14] Olympic hosts are also required to provide accommodation for athletes, Olympic officials and visiting dignitaries, media and spectators, and the isolation and dispersal of venues and accommodation in the winter games, in particular, often requires permanent investment in transport infrastructure: to achieve the efficiency and flexibility to transport athletes and spectators across large areas in difficult terrain and adverse conditions.[15]

The growth of the Olympic Winter Games posed a major challenge, in particular with regard to the reuse of venues after the event.[16] The reuse of venues of the Olympic Winter Games in particular requires specific consideration because of the unique context within which they exist. Whilst the majority of venues constructed for the summer games can be accommodated within the urban confines of the host city, a much greater proportion of winter games host venues are, by necessity, located within ecologically sensitive environments, beyond the urban area.[17] Whilst cities have some capacity to absorb such large scale venues and infrastructure, securing the long-term use of venues in smaller, ecologically sensitive, mountain communities can be more complex. The construction and operation of event facilities in remote rural regions can have considerable physical and aesthetic implications for natural and semi-natural landscapes and can place considerable strain on small communities staging the games both during and after the event.[18]

Although awareness of the environmental impacts of the winter Olympics have been central to their organization for a longer period than for the summer games, investment in Olympic winter sport facilities must be considered carefully to avoid creating a legacy that is difficult to sustain.[19] The legacy of winter Olympic venues can be positive in terms of stimulating the economy through the staging of other events and by facilitating wider participation in sport. However, it can also be

negative if the facilities are little used and drain the local area's resources. Venue legacy is often judged in terms of post-event use. Therefore, the chances of perceived legacy success are often greater where a facility is easily adapted, multifunctional, and in keeping with wider planning goals. Although some winter Olympic venues are easily repurposed to have tourist and recreational functions, others built to the specifications for Olympic sport may only be suitable for use by elite level athletes. Some venues demonstrate narrower community appeal due to their specific requirements and limited opportunities for participation.[20]

As global environmental concerns came to the forefront of international debate toward the end of the twentieth century, the sustainability of the Olympic Games began to rise on public and political agendas. The legacy of venues, in particular, rose to the fore. 'Legacy' began to appear in the policies of the International Olympic Committee (IOC), playing a critical role in reforms to the candidature procedure. Yet, whilst it is recognized that planning and establishing positive post-games legacies is a complex and increasingly important issue, the development of a comprehensive body of knowledge on the legacy of venues is limited.[21] Few studies compare the plans stated in the candidatures with what is actually built or how these structures are used after the games, and there is a lack of understanding around adaptations to legacy planning policy, and how they have affected legacy outcomes in winter Olympic Games host cities and regions.[22] Although there have been some studies of individual winter games, there has been no overarching review or analysis published to date.[23] A thematic analysis of the candidature files and official reports of the Olympic Winter Games held in Europe since 1948 demonstrates how legacy proposals have developed in the candidature file, and whether these trends have influenced design, construction, and planning for long-term function in Olympic venues.[24] To acquire a richer understanding of the impact of past winter Olympic Games on the built environment in the present and future, the relationships between legacy policy, legacy proposals, construction and outcome must be understood.

Impacts on Host Regions through the Growth and Expansion of the Games

Although the Olympic Games are a sporting event and media phenomenon, they are also about cities, which provide the site and identity for an edition of the games.[25] The early editions of the Olympic Games necessitated minimal investment, but over the last century, urban development in connection with the Olympics has grown in terms of content, scale, form and complexity. As the games became a truly global occurrence, the costs of hosting the event escalated.[26] The games began to present not only opportunities but also liabilities to the satisfaction and detriment of local needs.[27] Over the course of the twentieth century, potential hosts largely perceived the benefits derived from the event to outweigh potential detriment, but in recent decades the decline in bids to host the games has revealed a lack of confidence amongst potential hosts in the ability to leverage benefits from the event.[28]

The very first editions of the Olympic Games were small scale with little physical impact on the structure of the cities in which they were held, as most, if not all, of

the events took place in existing sports facilities. However, it was not long before the Olympic Games began to be utilized by hosts to develop urban initiatives. The first instance of this dates back to the 1908 London Olympics, before the inception of the Olympic Winter Games as an event in its own right, when the organizers constructed the White City Stadium expressly for the Olympic Games.[29] The White City Stadium proved an unsatisfactory venue as organizers attempted to accommodate too many sports within a single architectural solution. Thus, a shift toward the construction of new specialist sports facilities, with the main stadium as the ceremonial focus and centrepiece of the event, began.[30]

In early editions of the Olympic Winter Games, the competitions were held in small mountain communities with only slight modifications to the natural environment.[31] From 1932 onwards, more substantial development of Olympic-related urban elements began, as communal residences for athletes, in the form of an Olympic village, were constructed alongside new sporting venues.[32] Games occurring after the Second World War, and the 12-year hiatus in the Olympic programme triggered by its outbreak, were characterized by austerity. Hosts identified the potential of the games to promote urban revitalization in war-damaged cities, as the games augmented in popularity amongst athletes and spectators, creating increased infrastructural demands.[33]

In the post-war era, rapid global progression of the economy, social mobility and communications prompted a wave of radical urban growth, placing pressure on existing housing and civic infrastructure. Planning in Western cities became heavily influenced by architectural modernism, and Olympic urbanism was inevitably impacted as a result.[34] New sports infrastructure unrelated to local needs began to arise in cities as a consequence of the event.[35] In the 1960s, the games emerged as a means to promote and facilitate regional development. By the late 1970s the games had transpired as a catalyst for urban renewal. By the mid-1980s large scale transformations were taking place in host cities and regions in the build-up to the event.[36] Urban development in connection with hosting the Olympic Games began to extend far beyond the boundary of sports and associated facilities to a more comprehensive urban scheme.[37] The games were recognized as a catalyst for tourism-development with international visibility.[38] As increasing numbers of athletes and sport events placed higher demands on sporting infrastructure, it became evident that larger settlements were needed to host the games. In relation to the Olympic Winter Games, this necessitated the award of the games to cities, rather than the smaller mountains regions that had characterized the early winter games. However, few cities have immediate access to the mountain terrains necessary to host winter Olympic events, creating further dispersion of venues.

In the 1990s when the IOC altered the winter games cycle, the winter Olympics began to be awarded to smaller settlements, such as Albertville (1992) and Lillehammer (1994) once more. By the turn of the century, though, the games had returned to the larger cities of Salt Lake City (2002), Torino (2006), and Vancouver (2010). The growth of the winter games reached its pinnacle in the staging of the Sochi 2014 winter Olympics, which had the highest number of athletes, participating nations, and events of any winter games.[39] The Sochi Olympic Winter Games cost

€55 billion in total, the highest ever cost of an Olympic Games; nonetheless, after the event, issues around the legacy of venues remained.[40]

When the IOC switched the summer and winter games to separate four-year cycles after 1992, the number of candidates bidding to host the winter Games grew.[41] Thirty-one locations expressed an interest in hosting the winter games of 2002.[42] However, in the last decade, and particularly after Sochi 2014, bidding to host the games diminished remarkably due a combination of the cost intensity of the bid, organizational complexity, planning uncertainty, and concerns around legacy and sustainability.[43] In the bid to host the Olympic Winter Games in 2022 and the Olympic Summer Games in 2024 and 2028, only two of ten candidates for the winter games, and two of six candidates for the summer games, remained for the final selection at the IOC General Assembly. The reduction in candidates followed negative referenda on hosting the winter Games of 2022 (in Munich and Kraków) and 2026 (in Graubünden, Sion, Innsbruck, and Calgary), and the withdrawal of bids to host the winter Games in 2022 (Oslo) and 2026 (Graz and Sapporo).[44] This sharp decline in bids indicates that many potential host cities of the Olympic Winter Games no longer perceive the benefits to outweigh the costs.

Sport Facilities

The construction or refurbishment of sports facilities has been a constant requirement for Olympic hosts throughout the history of the winter games. The range of sports facilities required to host the event has been largely static throughout its history, including: the Olympic stadium (for the opening and closing ceremonies); ski jumps (for ski jumping and freestyle), ski slopes (for slalom and downhill skiing and snowboarding); ski trails (for cross country skiing); sliding centres (for bobsleigh, luge and skeleton); and ice arenas (for hockey, curling, speed skating and ice skating). However, as new sports disciplines and events have been incorporated into the programme, the range and programmatic requirements for winter Olympic archetypes have evolved and expanded, with different outcomes based on local circumstances.[45] Although the Olympic stadium is the jewel of the summer Olympic Games, the facility par excellence of the winter Olympic Games is often the ski jump. Some ski jumps, including Garmisch-Partenkirchen (1936), Innsbruck (1964, 1976), and Lillehammer (1994), have in fact been the site for the opening ceremony, and in many winter Olympic host cities – Garmisch-Partenkirchen, Oslo (1952), Cortina d'Ampezzo (1956), Innsbruck, and Calgary (1988) – became an icon of the city after the games, a tourist attraction and event space. There are, of course, exceptions. The ski jump of Grenoble (1968) was decommissioned in the 1990s due of lack of use and maintenance costs.[46] Ski jumping is a discipline not widely practiced beyond Scandinavia; therefore, the legacy of the ski jump poses a challenge in many Olympic host cities. Even in Norway, where competitive ski jumping originated and skiing is deeply embedded in culture, the Olympic ski jump is not regularly used except by a small group of elite athletes.[47]

Other venues that face the same potential problems include the bobsleigh, luge and skeleton runs, and the speed skating oval. In the early days of the winter games,

the bobsleigh, luge and skeleton runs were carved out of glacier, but as it melted during the day, Olympic competitions had to be held at night. A trend towards artificial, man-made runs emerged. Like ski jumping, bobsleigh, luge and skeleton are practiced by relatively few athletes, and touristic use in the long term does not generate enough income to cover the costs of operation and maintenance. Similarly, the first speed skating ovals were outdoor venues on natural ice, but, as of 1994, it became mandatory for Olympic cities to provide indoor facilities for the sport. Whilst some skating ovals are architectural works of art and icons of the city, successfully converted into concert halls, multi-purpose sports arenas, or exhibition halls, their sheer scale poses a challenge in securing long-term function.[48] The winter games also leave behind a legacy of ski runs, most frequently used by locals and tourists after the games, and ice rinks, which have potential to generate a range of public functions, but their games time capacity can prove problematic in the long term, particularly in small towns.[49] The problems posed by the scale and specificity of winter Olympic venues in relation to their long-term use led to increasing concern around issues of legacy. As a consequence, legacy became a widely debated subject that became increasingly prevalent in academic literature and prominent in Olympic policy, with a view to improve legacies in future host regions.

Evolution of Legacy Policy

As a result of the challenges presented by the constant growth of the Olympic Winter Games, the management of Olympic legacy has become a key characteristic of the Olympic Winter Games.[50] In terms of legacy, there are three distinct temporal phases that are likely to reveal different local impacts: the bidding phase, the planning phase and the legacy phase. The legacies phase of Olympic impact is the least well-defined in current research, complicated by the fact that the foundations of post-games legacies are laid in the earlier phases.[51] Creating and managing a legacy plan for a host city is important because it allows stakeholders to implement and evaluate legacies created by hosting the event.[52]

The legacy of venues has been present in the Olympic context since the inception of games. The early writings of Pierre de Coubertin, the founder of the Modern Olympic Games, advised that permanent stadia should not be constructed with the intention to host future events when temporary buildings would satisfy Olympic demand.[53] Organizers of the early winter Olympics were particularly aware of the long-term viability of facilities when deciding whether to stage the games, mainly due to the small size of potential host settlements and their limited capacity to sustain expensive, high order facilities.[54] Concerns around sustainable development, environmental protection and legacy did not begin to rise until the 1930s, when organizers of the 1932 Olympic Winter Games began to question whether the costs of creating new facilities could be justified.[55] It was not until the 1970s and 1980s that the concept of legacy began to be formalized in IOC policies, as issues of the effect of Olympic development on the environment, particularly in the winter Olympic context, became increasingly important.[56] In the 1990s, the issue of legacy continued to develop, emerging in sport management literature and in the

candidatures of host cities for the Olympic Games. In the context of the winter games, this coincided with the first time that the winter games were not held in the same year as its summer counterpart.[57]

The wider debates on environmental protection and sustainability began to appear in Olympic policy and the candidature process, necessitating more explicit legacy planning in the bid. In 1991, the Davos World Economic Forum addressed the issue of sustainable development. In the same year, the question of holding major competitions in mountainous zones, in particular the Alps, was widely debated at the first international conference of winter Olympic Games host cities and regions in Chambery, near Albertville, to raise awareness around the potential environmental impacts of the Olympic Winter Games.[58] The IOC amended the *Olympic Charter* to state that the Olympic Games should be held under conditions that respected the environment.[59] This change led to the modification of the manual for host cities, a questionnaire completed by the host in the application to host the Olympic Games.[60]

At the 1992 UN conference on Environment and Development (UNCED), more than 178 governments adopted Agenda 21, a declaration on environment and development to manage pressing environmental concerns and prepare the world for the challenges of the next century.[61] Consequently, the IOC added 'environment' as the third pillar of Olympism in 1994.[62] All international, regional and local organizations, both governmental and non-governmental, were invited to prepare their own Agenda 21 based on the model adopted by UNCED, and in 1999 Agenda 21 was adopted and endorsed by the IOC and the Olympic movement.[63] In the same decade, the organizers of the centennial Games highlighted the legacies that would be left behind in the host city after the Games had ended during the planning phase of the Games. At the turn of the century, post-event legacies began to be discussed in further detail, but without any material indication of how they legacies would be achieved.[64]

The IOC and the International Union of Architects (IUA) hosted an international conference in Lausanne on the Olympic Games and Architecture in 2001 to address issues of sustainability in Olympic construction. The conference concluded that the IUA, IOC, bid and host cities and public authorities should work more closely together to improve guidelines and achieve a better understanding of requirements. Going forward, the guidelines were to include: establishing more specific instructions for city masterplans and better games concepts and venues; generating input from all stakeholders at the earliest stage; making the best use of existing, new and temporary facilities; achieving compatibility between architectural quality and functionality; and considering more thoroughly the long and short term needs of the host city.[65]

In 2003 the IOC outlined 'legacy' in rule 2.14 of the *Olympic Charter*, which stated that the role of the IOC is to 'promote a positive legacy from the Olympic Games to host cities and countries'.[66] However, the lack of clarity around its meaning prompted a further international symposium on the legacy of the Olympic Games from 1984 to 2000.[67] The symposium focused on the fundamental role of legacy to Olympism in society, which recognized the importance of the concept of legacy in the organization and evaluation of the Olympic Games in host cities. The IOC highlighted legacy as fundamental to the Olympic mission, stating that organizing

committees should ensure that the permanent venues constructed for the Olympic Games are functional, sustainable and adequate for their function in legacy mode.[68] Thus, legacy began to be written more explicitly into Olympic policy documents.

During the XXVII Olympiad, the Sydney Organising Committee for the Olympic Games created the Olympic Games Knowledge Management (OGKM) Programme to aid the transfer of knowledge from one organizing committee (OCOG) to another and support subsequent organizers to both prepare for a successful event and secure positive legacy from the games. As a direct result of the OGKM, the IOC launched the Olympic Games Impact Study (OGGI) to measure the overall impacts of the Olympic Games to: assist bidding cities and future Olympic Games organizers through the transfer of strategic direction obtained from past and present Olympic Games; identify potential legacies and thereby maximize the benefits of their Olympic Games; and, create a comparable benchmark across all future Olympic Games.[69] The first Winter Olympic Games to complete a full cycle of the OGGI, commencing when the official candidacy is announced by the NOC and concluding two years after the event has taken place, was Vancouver, for the 2010 Olympic Winter Games.

Next, at the 126th session of the IOC in Sochi in February 2014, the president of the IOC tasked 14 working groups with a major review of all aspects of the Olympic Games from candidature to delivery and legacy, creating Olympic Agenda 2020, a strategic plan for the future of the Olympic movement.[70] At the 127th session of the IOC in December 2014 in Monte Carlo, the IOC gave unanimous support to its reforms, which detailed 40 recommendations that aim to create a 'games which are more flexible, easier to operate, and less expensive, whilst also unlocking more value for host cities over the long term'.[71] The IOC developed a strategic approach towards legacy with four key objectives: to embed legacy through the Olympic Games lifecycle; document, analyze and communicate the legacy of the Olympic Games; encourage Olympic legacy celebration; and build strategic partnerships.[72]

At the 132nd session of the IOC in February 2018, the IOC presented 'the New Norm', a revised plan to reshape the candidature process through a set of 118 ambitious reforms. Examples include to reimagine the delivery of the games, with a focus on the recommendations of the Olympic Agenda 2020; to transform how the Games are delivered and focus on long-term development plans before the host city announcement, seeking to ensure that cities receive more support and assistance from the International Olympic Committee before, during and after the event; and to highlight the requirement to improve methods of knowledge transfer between previous and future host cities to reduce costs and promote positive legacy.[73] With these changes, legacy clearly became a policy issue for the IOC and a requirement that potential host cities must take seriously.

Impacts of Policy Change on Legacy Planning in European Host Cities

Appropriate planning is sited as central to achieving positive legacies, and whilst not all legacies are planned or intended, inadequate attention paid to legacy planning has been attributed to negative outcomes.[74] Throughout the history of the games, the long-term function of venues has often been considered, to a greater or lesser extent,

even before awareness of issues around legacy, sustainability and environment truly began to emerge. Notations on venue construction are provided in the candidatures and official reports of the games from the earliest editions of the event. Even in early editions of the games, before long-term function began to be discussed in terms of legacy, some of the candidature files demonstrate its consideration.

Although the planning for the St. Moritz games in 1948 was focused around the provision of outstanding sporting venues for competitors, the organizing committee re-used sites from the winter Olympic Games of 1928, slightly extending and improving the facilities.[75] At this point in history, post-war reconstruction, rather than expenditure on venues to host an Olympic Games, was a key priority. Norway, which had a history and tradition of winter sport, declined to host the winter games in 1948 when the organizing committee in London, which hosted its summer counterpart in the same year, suggested Oslo due to insufficient time for planning and lack of venues.[76]

Norway did go on to host the winter games in 1952 in Oslo, which was, at the time, the largest centre to have accommodated the event. The selection of a larger city as a winter games host created new opportunities for the type of facilities that could be provided, as the post-Olympic viability and future use was more assured due to the increased population size.[77] Whilst some of the major infrastructures, such as the ski jump, already permanently existed in Oslo, the organizers designed and developed other venues as impermanent features, including the bobsleigh run, which was made of ice. This ice track was typical of the method of construction at the time, but it also prevented leaving an indelible mark on the natural environment. Oslo dispersed its venues for ice hockey across the city and beyond its boundary in order to allow more people to attend the events. This strategy prevented a large collection of oversized venues in a single concentration but also made it necessary to develop new transport infrastructure, such as roads, bridges and ski lifts. Oslo was the first Olympic Winter Games host to construct an Olympic village with a considered post-Olympic use, albeit dispersed across various locations across the city.[78]

When the IOC awarded Cortina d'Ampezzo the 1956 winter games, none of the key infrastructure necessary for hosting elite level competition existed in the region, although it did boast a number of other sports venues adequate for touristic and community use. All of the major venues needed to be constructed: there was no suitable ice arena for Olympic skating or hockey, the ski-jump was no longer suitable for Olympic-level competition; the ski runs did not meet international requirements; the bobsleigh track was far from complete; and there was no speed skating rink in existence. Whilst many of these venues were constructed as permanent, the skating oval was held outdoors, on natural ice. The Organising Committee abandoned their initial plans for an Olympic village as a result of opposition from local hoteliers, who feared the effect of an increase in the town's accommodation capacity on their business.[79]

After the games in Cortina d'Ampezzo, there was increased attention toward the planning and the acquisition of information in the candidature phase, when it emerged that both the organizing committee and the IOC selection committee for the Melbourne Olympic Games later that year had overlooked Australia's equine

quarantine laws, preventing the equestrian events of the 1956 summer Olympic Games from taking place in the host city. This example highlighted the need for a more systematic process of gaining technical and other important information affecting the ability of the city or region to host the Olympic Games. In recent decades, this sharing of information has been extended to the consideration of legacy planning, in addition to the arrangements for the delivery of the event. As a result of the oversight in Melbourne, the IOC introduced the 'host city questionnaire' for cities seeking to host the Olympic Games.[80] Over the years, as legacy has been more explicitly integrated into Olympic policy, legacy has also been more explicitly outlined in the questionnaire, which the IOC evaluation commission uses to appraise whether the legacy vision meets the expectations of the IOC.[81]

By the 1960s, television revenue had emerged as an important source of income for Olympic hosts, and major infrastructural investment began to arise as part of broader modernization programmes, although there had still been no major changes in terms of legacy in Olympic policy.[82] The IOC awarded the 1964 Olympic Games to Innsbruck, which, like St. Moritz (1928, 1948), hosted the winter games a second time in 1976; Innsbruck then hosted a third Olympic festival in 2012 with the Youth Olympic Winter Games. The 1964 Innsbruck Olympics implemented a model of new construction, including a new Olympic stadium, ice arena, ski jump, bobsleigh run, Olympic village and ski runs. This trend continued in 1968 with the Olympic Winter Games of Grenoble, which aimed to play an instrumental role in the modernization of the d'Isere region.[83] French government and regional leaders used the impetus of the Games to decentralize the region and facilitate economic growth, but with the increasing scale of the Olympic Winter Games, risks associated with the construction of venues began to unfold.[84] Examples are plentiful: the bobsleigh run at Alpe d'Huez was too exposed to the sun, which meant competitions had to be held at night; the ski jump in St. Nizier was too exposed to the wind, which disrupted training sessions; the Chamrouse downhill ski runs were too affected by mist and at too low altitude for snow to be guaranteed; and the luge run at Villars de Lars was similarly at too low of altitude to guarantee ice. As a result, most of the sports facilities became derelict a few years after the games.

As the topic of legacy increasingly became significant for Olympic hosts, organizers and the IOC, Innsbruck became a second time host for the Olympic Winter Games in 1976. The IOC awarded the winter games to Innsbruck after Denver withdrew due to opposition.[85] In contrast to the first time that Innsbruck hosted the Games, the intention of the city on this occasion was to host a 'simple Games', reusing the 1964 facilities. However, the winter games had grown considerably in the twelve years that had passed since Innsbruck last hosted the event. The city required more infrastructure at huge cost, as it was necessary to build a new artificial bobsleigh and luge run.

When Europe next hosted the games, in Sarajevo, in 1984, the use of the games as opportunity and impetus to modernize the city was resumed.[86] At the time of the candidature, Sarajevo had one artificial ice arena and some, limited, cross country and biathlon tracks. To host an Olympic Games, the city needed to construct all major facilities, including two new ski jumps, two ice rinks, a speed skating facility, a

combined bobsleigh and luge run, new alpine ski runs, and accommodation for athletes. Furthermore, the existing alpine ski runs, cross county and biathlon course were reconstructed to make them suitable for Olympic competition, including the construction of a completely new shooting range.[87] As a result, the cost of the Sarajevo Games soared, exceeding initial estimates more than ten-fold.[88]

By the time Albertville hosted the winter games in 1992, concerns around legacy and the environment had begun to develop, both generally in society and in relation to the Olympic Games. Legacy had begun to develop in literature and policy, and the previous year had witnessed an amendment to both the *Olympic Charter* and the host city questionnaire, although these would not affect potential hosts until later in the decade given the timeframe of the cycle of the Games from submission of the candidature to the event. Facing difficulties in justifying the investment in permanent purpose-built Olympic facilities and villages, Albertville elected to host the 1992 Olympic Winter Games in a small town in the heart of the mountains.[89] Funded by the state and local communities, these winter games were regarded as a highly successful event, uniting the state and department of the Savoie in an effort to restore and enhance the historical heritage of the Savoie region.[90] Thirty-three buildings in 27 regions received funding for restoration work as a result of hosting the games. The venues constructed for the event met the demands of the athletes and television companies, but the facilities were not constructed in such a way that they would be deemed too large during or afterward. The use of venues after the games was integrated early in the process, and, as a result, temporary structures were employed where the facilities would have no use after the games, for example, the Olympic stadium and the skating oval. In other facilities, such as the bobsleigh and luge track, reuse after the games was incorporated into the designs. For the Olympic village, a small spa was renovated, rather than constructing a purpose-built facility, but its proximity to the sports venues was problematic, and so several smaller Olympic villages were established in existing hotel accommodation closer to the sites. After the games in Albertville, the IOC stated a preference toward a single Olympic village in subsequent host cities to promote contact between athletes from different countries.[91]

In 1994, the first year of change to the cycle of the summer and winter games, the winter Olympics took place in Lillehammer. Lillehammer's bid for the 1994 Olympics addressed environmental challenges, ethical solidarity with current and future generations, a responsibility toward global balance and nature, and an understanding of the city's role. The Norwegian Prime Minister at the time, Gro Harkem Brundtland, was the former president of the World Commission on Environment and Development. She popularized the term 'sustainable development' and incorporated the principles of sustainable development into Norway's bid for the games, proposing five green goals.[92] This approach influenced the IOC to include an environmental commitment to its *Charter*.[93] The Lillehammer Olympics were a success from many perspectives. The determination to promote sustainability took the form of reflection on past games use of Olympic facilities as sports centres, schools, and congress centres, and after the event, the wooden houses of the temporary Olympic village were dismantled and sold throughout Norway.

By the time of the next European host of the Winter Games, Torino in 2006, the IOC had invested much effort into tackling legacy concerns in relation to the Olympic Games. There had been several conferences to debate the matter between the IOC, academics and the International Union of Architects. The IOC made a number of major changes to their legacy policies, and took steps toward developing better systems of sharing, developing and enhancing legacies. The idea of hosting a 'green' winter games was commonplace in bids by the early twenty-first century, but the Torino Organising Committee (TOROC) was the first organizing committee to conduct a strategic environmental assessment and publish a report on economic, social and environmental impacts.[94] Competition venues in Turin were located in a central area, referred to as the Olympic district, and used a mix of purpose built and restructured facilities.[95]

After Torino, it was almost a decade before the games again took place in Europe, in Sochi, 2014. During this time, the Olympic Games impact study had been undertaken in full through the planning, event, and legacy phases of Vancouver 2010. The IOC had been working towards Olympic Agenda 2020 (a strategic approach toward developing positive legacies set out by the IOC to fully integrate legacy throughout the process of bidding for, planning and hosting the games) from the moment that local stakeholders begin to consider hosting the event until after its completion.[96] Olympic Agenda 2020 set out four key phases of the legacy vision (conceptualization, planning and implementation, transfer, and post-games governance).[97] The integration of legacy planning in the conceptualization phase means that cities proposing a candidature for the games must consider the long-term impacts of hosting the event, with an aim to enhance the legacy of venues built in advance of the games to attract the event.[98] This requirement in turn supports cities that are unsuccessful in the bidding process to generate a positive benefit from the candidature.

The bid for Sochi 2014 aligned with this ideal and the long-term development strategy for the Sochi region, yet the widespread infrastructural projects conducted for the games produced mixed legacies.[99] Upgrades to the transportation, telecommunications and sports infrastructure across the city and wider region, undertaken for the purpose of hosting the event, helped Sochi to establish itself as a year round tourist destination, even before the games had taken place. In the 2013 winter holiday season, visits increased thirteen percent compared to the previous year.[100] This increase demonstrates the ability of the event to deliver benefits aligned to the long-term plans of the host city in the short and medium term; however, the long term function of venues remains a challenge to secure. The majority of venues in Sochi's mountain cluster continue to be used as training sites for future Olympic athletes, but the future of six stadia and the main media centre in the coastal cluster is uncertain. Furthermore, after-use plans for some of the other venues require significant further investment, after what has already been dubbed, the most expensive ever Olympic Games.[101]

The IOC has taken an increasingly active role in capturing and sharing quality information on the legacy of the Olympic Games, and sharing that knowledge with future hosts in the twenty first century. Nonetheless, changes to Olympic policy and

the more integrated approach toward legacy planning in the early phases of the candidature are in the early stages of development. In addition, the legacies of those editions of the games planned since the implementation of policy changes remain in their infancy. As a result, it is too early to determine the impact of policy changes on venue legacy.

The Impact of Legacy Planning on the Design and Long-Term Function of Venues

Whilst the more coherent and cohesive integration of legacy planning into policy is undoubtedly a step toward the generation of better considered legacy outcomes tailored to the unique context of the host city, even the most recent editions of the Olympic Winter Games have demonstrated inconsistent outcomes in relation to the reuse of venues. When assessing the impacts of legacy policy on legacy outcomes, there is, of course, a matter of timing, which exists on a continuum synchronized to the lifespan of the building and the social, political, and economic context within which it exists.[102]

Advancement in legacy debate and policy is relatively recent; debates around the legacy and sustainability of the Olympic Games developed in the 1990s and continues to evolve. Given the lifecycle of an Olympic Games, from the inception of the idea to bid to host the event through to the post event legacy phase, perhaps the effects of policy change will not truly be observed for years or decades, when they are fully integrated in the process from start to finish. The legacies of recent editions of the Olympic Winter Games also remain in their infancy; for example, only six years have passed since the Sochi winter Olympics. Although there is no agreed timescale in which a legacy can be identified as such, it is recognized that legacies take time to develop.[103]

Irrespective of advancements in legacy planning policy, the candidatures and official reports of the winter games show that the long-term function of venues has been considered, to a greater or lesser extent, throughout the history of the winter Olympics. Before the IOC required formal plans regarding legacy, awareness of issues around legacy, sustainability and environment were, in some instances, included by organizing committees. Notations on venue construction are provided in many candidatures and official reports of the Olympic Winter Games from the earliest editions of the event, and even in early editions of the games, before long-term function began to be discussed in terms of legacy, some of the candidature files demonstrate its consideration.

In addition to policy changes, knowledge transfer has an important role to play in enhancing legacies and promoting more sustainable Olympic Winter Games. Strategies of reuse and temporality to reduce environmental impact are not new, and a review of different approaches may prove a useful planning tool in future editions of the games, albeit within the unique context of the new host city. Whilst the Olympic Games Impact Study demonstrates a shift towards this culture, it fails to provide a full and adequate assessment of legacy in relation to venues.[104] Combined with the fact that the OGGI relies on secondary data, collected and collated

differently by different nations, and that the study ceases two years after the games, there are difficulties in making comparisons between sites. Despite these limitations, the IOC has taken a more active role in collecting and sharing quality information on the legacy of the Olympic Games on a regular basis and capturing the legacy of past Olympic Games. Capturing failed legacies and negative long term outcomes is thus a useful learning tool for upcoming editions of the event.

Notes

1. Heike C. Alberts, 'The Re-use of Winter Sports Facilities after the Olympic Games', *FOCUS on Geography* 54, no. 1 (2011): 24–32.
2. Stephen Essex and Brian Chalkley, 'Olympic Games: Catalyst of Urban Change', *Leisure Studies* no. 17 (1998): 187–206; Noam Shoval, 'A New Phase in the Competition for the Olympic Gold: The London and New York Bids for the 2012 Games', *Journal of Urban Affairs* 24, no. 5 (2002): 583–99; John R. Gold and Margaret M. Gold, eds., *Olympic Cities: City Agendas, Planning and the World's Games 1896-2012* (New York: Routledge, 2007).
3. Essex and Chalkley, *'Olympic Games: Catalyst of Urban Change'*, 187–206; Shoval, *'A New Phase in the Competition for the Olympic Gold'*, 583–99; Richard W. Pound, *Inside the Olympics: A Behind the Scenes Look at the Politics, the Scandals, and the Glory of the Games* (London: John Wiley and Sons, 2006).
4. Robert VanWynsberghe, I. Derom, and E. Maurer, 'Leveraging the 2010 Olympic Games: Sustainability in a City of Vancouver Initiative', *International Journal of Policy Research and Tourism, Leisure and Events* 4, no. 2 (2012): 185–205.
5. G. Ahlfeld and Walter Maennig, 'Impact of Sports Arenas on Land Values: Evidence from Berlin', *Annals of Regional Science* 44, no. 2 (2010): 205–27.
6. D. O'Brien and Laurence Chalip, 'Sport Events and Strategic Leveraging: Pushing Towards the Triple Bottom Line', in *Tourism Management: Analysis, Behaviour and Strategy*, ed. A.G. Woodside and D. Martin (Cambridge: CAB International, 2007), 318–38; Sean Gammon, Gregory Ramshaw, and Emma Waterton, 'Examining the Olympics: Heritage, Identity and Performance', *International Journal of Heritage Studies* 19, no. 2 (2013): 119–24.
7. Stephen Essex and Brian Chalkley, 'Mega Sporting Events in Urban and Regional Policy: A History of the Winter Olympics', *Planning Perspectives* 19, no. 2 (2004): 201–32.
8. N. Muller, M. Messing and Holger Preuss, *'Von Chamonix bis Turin', Die Winterspiele im Blickfield der Olympiaforschung* (Kassel: Agon Sportverlag, 2006); John R. Gold and Margaret M. Gold, 'Urban Segments and Event Spaces: World's Fairs and Olympic Sites', in *The Routledge Handbook of Planning History*, ed. C. Hein (London: Routledge, 2018), 348–63.
9. Essex and Chalkley, 'Mega Sporting Events in Urban and Regional Policy', 201–32.
10. See Essex and Chalkley, 'Mega Sporting Events in Urban and Regional Policy', 201–32; Gold and Gold, 'Urban Segments and Event Spaces', 514–34; Stephen J. Essex and Brian S. Chalkley, 'The Winter Olympics: Driving Urban Change, 1924-2002', in *Olympic Cities: City Agendas, Planning and the Worlds Games, 1986-2012*, ed. John R. Gold and Margaret M. Gold (London: Routledge, 2007), 49–59. –>
11. At the first Winter Olympic Games in Chamonix, in 1924, sixteen events took place in nine sport disciplines. By the turn of the century the number of events had increased to fifteen, with the majority of new events incorporated into the programme during the 1990s –>. At the most recent Winter Olympic Games in PyeongChang in 2018, one hundred and two events took place across fifteen sport disciplines. –>
12. Alberts, 'The Re-use of Winter Sports Facilities after the Olympic Games', 24–32.

13. Three locations have twice hosted the Olympic Winter Games: St. Moritz in both 1928 and 1948; Lake Placid in 1932 and 1980; and Innsbruck in 1964 and 1976.
14. Essex and Chalkley, 'Mega Sporting Events in Urban and Regional Policy', 201–32.
15. Ibid.
16. Hanwen Liao and Adrian Pitts, 'A Brief Historical Review of Olympic Urbanisation', *International Journal of the History of Sport* 23, no. 7 (2006): 1232–52; Maximos Malfas, Eleni Theodoraki, and Barrie Houlihan, 'Impacts of Olympic Games as Mega Events', *Journal of the Institution of Civil Engineering (ICE),* 157, no. 3 (2004): 209–20; Jean-Loup Chappelet, 'From Lake Placid to Salt Lake City: The Challenging Growth of the Olympic Winter Games Since 1980', *European Journal of Sport Science* 2, no. 3 (2002): 1–21; Essex and Chalkley, 'Mega Sporting Events in Urban and Regional Policy', 201–32.
17. Alberto Aragón-Perez, 'Origins of the Environmental Dimension of the Olympic Movement', *Journal of Olympic History* 25, no.1 (2017): 26–33.
18. Essex and Chalkley, 'Mega Sporting Events in Urban and Regional Policy', 201–32.
19. Ibid.
20. Alberts, 'The Re-use of Winter Sports Facilities after the Olympic Games', 24–32.
21. Jean-Loup Chappelet, 'The Legacy of the Olympic Winter Games: An Overview', in *International Symposium (2003) The Legacy of the Olympic Games 1984-2000* (Lausanne: Documents of the Museum, 2003), 54–66.
22. Alberts, 'The Re-use of Winter Sports Facilities after the Olympic Games', 24–32.
23. Essex and Chalkley, 'Mega Sporting Events in Urban and Regional Policy', 201–32.
24. Since the Winter Olympic Games began to be hosted by a different nation to the Summer Olympic Games in 1948, the majority of the competitions (ten out of sixteen) have been hosted by European countries. Of the other six editions of the Games, three took place in the United States, two in Japan, and one in Canada.
25. Harry Hiller, 'Towards a Science of Olympic Outcomes: The Urban Legacy', in *The Legacy of the Olympic Games 1984-2000: International Symposium*, ed. Miguel de Moragas, Christopher Kennett, and Nuria Puig (Lausanne: International Olympic Committee, 2003), 102–9.
26. Gold and Gold, *Olympic Cities;* Nola Agha, S. Fairley, and H. Gibson, 'Considering Legacy as a Multidimensional Construct: The Legacy of the Olympic Games', *Sport Management Review* no. 16, 1 (2012): 125–39.
27. Hiller, 'Towards a Science of Olympic Outcomes'. Opportunities include that host communities can benefit from urban rejuvenation, new and refurbished sports facilities and transport connections; and liabilities include that the endeavour is linked with significant public expenditure, disruption to daily life and living, and the displacement of public funds. See Kiki Kaplanidou and Kostas Karadakis, 'Understanding the Legacies of a Host Olympic City: The Case of the 2010 Vancouver Olympic Games', *Sport Marketing Quarterly* 19, no. 2 (2010): 110–117.
28. Thomas Könecke and Michiel de Nooij, 'The IOC and Olympic Bids from Democracies and Authoritarian Regimes: A Socioeconomic Analysis and Strategic Insights', *Current Issues in Sport Science* 2 (2017): 1–10.
29. John Horne, 'From 1908 to 2012: Continuity and Change in London Olympic Narratives', in *Handbook of the London 2012 Olympic and Paralympic Games Volume 1: Making the Games*, ed. Vassil Girginov (Abingdon: Routledge, 2013), 17–28.
30. Adrian Pitts and Hanwen Liao, *Sustainable Olympic Design and Urban Development* (Abingdon: Routledge, 2009).
31. M. Pierre Kukawka, 'Les Jeux Olympiques d'Hiver: Enjeux et Perspectives. Grenoble 1968-Nagano 1998', *Revue de Geographie Alpine* 87, no. 1 (1999): 99–104.
32. Essex and Chalkley, 'Olympic Games', 187–206.
33. Marilyne Gaudette, Romain Roult, and Sylvain Lefebvre, 'Winter Olympic Games, Cities, and Tourism: A Systematic Literature Review in this Domain', *Journal of Sport and Tourism* 21, no. 4 (2017): 287–313.

34. Liao and Pitts, 'A Brief Historical Review of Olympic Urbanisation', 1232–52.
35. Gaudette, Roult, and Lefebvre, 'Winter Olympic Games, Cities, and Tourism', 287–313.
36. Matthew Burbank, Greg Andranovich, and Caroline Heying, *Olympic Dreams: The Impact of Mega Events on Local Politics* (Boulder, CA: Rienner Publishers, 2001); Gold and Gold, *Olympic Cities*; Gold and Gold, 'Urban Segments and Event Spaces', 514–34; International Olympic Committee, 'Factsheet: Legacies of the Games', International Olympic Committee, 2013, https://stillmed.olympic.org/media/Document%20Library/OlympicOrg/Factsheets-Reference-Documents/Games/Legacies/Factsheet-Legacies-of-the-Games-December-2013.pdf (accessed October 19, 2020).
37. Liao and Pitts, 'A Brief Historical Review of Olympic Urbanisation', 1232–52.
38. Gaudette, Roult, and Lefebvre, 'Winter Olypic Games, Cities and Tourism', 287–313.
39. Martin Schnitzer and Lukas Haizinger, 'Does the Olympic Agenda 2020 Have the Power to Create a New Olympic Heritage? An Analysis for the 2026 Winter Olympic Games Bid', *Sustainability* 11, no. 2 (2019): 1–21.
40. Martin Müller, 'After Sochi 2014: Costs and Impacts of Russia's Olympic Games', *Eurasian Geography and Economics* 55, no. 6 (2014): 628–55.
41. Essex and Chalkley, 'The Winter Olympics', 48–58.
42. Ibid.
43. Schnitzer and Haizinger, 'Does the Olympic Agenda 2020 Have the Power to Create a New Olympic Heritage?', 1–21.
44. Könecke and Nooij, 'The IOC and Olympic Bids from Democracies and Authoritarian Regimes', 1–10. After four of the cities bidding to host the 2024 Summer Olympic Games withdrew their candidatures also, the IOC, for the first time in its history, simultaneously selected Paris to be the host city of the Summer Olympic Games of 2024 and Los Angeles as host city of the Games in 2028. Schnitzer and Haizinger, *Does the Olympic Agenda 2020 Have the Power to Create a New Olympic Heritage*?, 1–21.
45. Essex and Chalkley, 'Olympic Games: Catalyst of Urban Change', 187–206.
46. Chappelet, 'The Legacy of the Olympic Winter Games', 54–66.
47. Ibid.
48. Ibid.
49. Ibid. For example, the International Federations for skating and ice hockey necessitate spectator capacities of 8,000–10,000 for Olympic competitions.
50. Chappelet, 'From Lake Placid to Salt Lake City', 1–21; Essex and Chalkley, 'The Winter Olympics', 48–58.
51. Karen Ferguson et al., 'Introduction: Special Issue on the Urban Legacies of the Winter Olympics', *Urban Geography* 32, no. 6 (2011): 761–6.
52. Kaplanidou and Karadakis, 'Understanding the Legacies of a Host Olympic City', 110–17.
53. Pierre de Coubertin, Norbert Muller, and William H. Skinner, 'Historical Perspectives on Olympism,' in *Olympism: Selected Writings of Pierre de Coubertin 1863-1937*, ed. Norbert Muller (Lausanne: International Olympic Committee (IOC), 2000), 245–526.
54. Essex and Chalkley, 'The Winter Olympics', 48–58.
55. Essex and Chalkley, 'Olympic Games: Catalyst of Urban Change', 187–206.
56. Burbank, Andranovich, and Heying, 'Olympic Dreams'; Gold and Gold, '*Olympic Cities*'; International Olympic Committee, 'Factsheet'; Jean-Loup Chappelet, 'Olympic Environmental Concerns About a Legacy of the Winter Games', in *Olympic Legacies: Intended and Unintended- Political, Cultural, Economic, Educational,* ed. J.A. Mangan and Mark Dyreson (Abingdon: Routledge, 2010), 1–19.
57. Chappelet, 'The Legacy of the Olympic Winter Games', 54–66.
58. Chappelet, 'Olympic Environmental Concerns and the Winter Games', 1–19; Ferdinand Landry and Madeline Yearles, *The International Olympic Committee- One Hundred Years 1894-1994: the Idea, the Presidents, the Achievements, Vol III: The Presidencies of Lord Killanin (1972-1980) and Juan Antonio Samaranch (1980-)* (Lausanne: International Olympic Committee (IOC), 1996), 286.

59. International Olympic Committee (IOC), 'Olympic Charter: In Force as from 16th June 1991', International Olympic Committee (IOC), https://stillmed.olympic.org/Documents/Olympic%20Charter/Olympic_Charter_through_time/1991-Olympic_Charter_June91.pdf (accessed October 19, 2020).
60. Chappelet, 'Olympic Environmental Concerns and the Winter Games', 1–19.
61. United Nations, 'Earth Summit: Agenda 21, Rio Declaration on Environment and Development', United Nations (accessed October 19, 2020), 3.
62. Chappelet, 'Olympic Environmental Concerns and the Winter Games', 1–19.
63. International Olympic Committee (IOC), 'Olympic Movement's Agenda 21: Sport for Sustainable Development', International Olympic Committee Sport and Environment Commission, https://stillmed.olympic.org/media/Document%20Library/OlympicOrg/Documents/Olympism-in-Action/Environment/Olympic-Movement-s-Agenda-21.pdf (accessed October 19, 2020), 10.
64. Chris Gratton and Holger Preuss, 'Maximising Olympic Impacts by Building up Legacies', *International Journal of the History of Sport* 25, no. 4 (2008): 1922–38.
65. Arata Isozaki, *Olympic Games and Architecture* (Lausanne: International Olympic Committee, 2001).
66. International Olympic Committee (IOC), 'Olympic Charter: In Force as from 4 July 2003', International Olympic Committee, https://stillmed.olympic.org/Documents/Olympic%20Charter/Olympic_Charter_through_time/2003-Olympic_Charter.pdf (accessed October 19, 2020), 11. –>
67. de Moragas, Kennet, and Puig, *The Legacy of the Olympic Games*.
68. Ibid.; International Olympic Committee (IOC), Olympic Legacy.
69. International Olympic Committee (IOC), 'What is the Olympic Games Global Impact Study?', *Olympic Review: Official Publication of the Olympic Movement*, International Olympic Committee (IOC), https://stillmed.olympic.org/Documents/Reports/EN/en_report_1077.pdf (accessed October 19, 2020).
70. International Olympic Committee (IOC), 'The New Norm, Candidate-Delivery-Legacy', International Olympic Committee (IOC), https://stillmed.olympic.org/media/Document%20Library/OlympicOrg/News/2018/02/2018-02-06-Olympic-Games-the-New-Norm-Report.pdf (accessed October 19, 2020).
71. Executive Steering Committee for Olympic Games Delivery, 'Olympic Agenda 2020: Olympic Games, The New Norm', International Olympic Committee (IOC), https://stillmed.olympic.org/media/Document%20Library/OlympicOrg/News/2018/02/2018-02-06-Olympic-Games-the-New-Norm-Report.pdf (accessed October 19, 2020), 3.
72. International Olympic Committee (IOC), 'Legacy Strategic Approach', International Olympic Committee (IOC), https://www.olympic.org/~/media/Document%20Library/OlympicOrg/Documents/Olympic-Legacy/IOC_Legacy_Strategy_Full_version.pdf?la=en (accessed October 19, 2020).
73. Executive Steering Committee for Olympic Games Delivery, 'Olympic Agenda 2020'.
74. Scarlett Cornelison, Urmilla Bob, and Kamilla Swart, 'Towards Redefining the Concept of Legacy in Relation to Mega Sports Events: Insights from the 2010 FIFA World Cup', *Development Southern Africa* 28, no. 3 (2011): 307–18; Gratton and Preuss, 'Maximising Olympic Impacts by Building up Legacies', 1922–38.
75. Comite Olympique Suisse, *Official Report of the Olympic Winter Games in St. Moritz 1948* (Lausanne: International Olympic Committee, 1951), 19; Donald C. Simmons, 'St. Moritz 1928: Winter Olympic Games', in *Historical Dictionary of the Modern Olympic Movement*, ed. John E. Finding and Kimberley D. Pelle (Westport: Greenwood Press, 1996), 228–31.
76. Organisasjonkomiteen, *Oslo 1952* (Lausanne: International Olympic Committee, 1952).
77. Essex and Chalkley, *The Winter Olympics*, 53.
78. Organisasjonkomiteen, *Oslo 1952*.
79. Comitato Olimipico Nazionale Italiano (CONI), *VII Giochi Olimpico Inversnali: Cortina d;Ampezzo, Rapporto Ufficiale* (Rome: CONI, 1956), 267.

80. Robert Oliver, 'Toronto's Olympic Aspirations: A Bid for the Waterfront', *Urban Geography* 32, no. 6 (2011): 767–87.
81. Leopkey and Parent, 'Olympic Games legacy', 924–43.
82. Essex and Chalkley, 'The Winter Olympics', 48–58.
83. F. Borja, *The Winter Olympic Games: Albertville 1992: A Case Study* (Paris: American university of Paris, 1992).
84. Comite pour la Candidature de Grenoble aux Jeux Olympiques d'Hiver 1968, *Jeux Olympiques d'Hiver 1968: Candidature* (Grenoble: Dauphine, 1962).
85. International Olympic Committee, 'Innsbruck 1976', https://www.olympic.org/innsbruck-1976' (accessed October 19, 2020); Jean-Loup Chappelet, 'From Lake Placid to Salt Lake City: The Challenging Growth of the Olympic Winter Games Since 1980', *European Journal of Sport Science* 2, no. 3 (2002): 1–21; Stephen Essex and Jiska de Groot, 'The Winter Olympics: Driving Urban Change, 1924-2022', in John R. Gold and Margaret M. Gold, *Olympic Cities: City Agendas, planning, and the Worlds Games, 1896-2020* (Abingdon: Routledge, 2017), 63–88.
86. Essex and Chalkley, 'The Winter Olympics', 48–58.
87. Organising Committee of the Sarajevo 1984 Winter Olympic Games, *Technical Questionnaire: Bosnia-Herzegovin, Sarajevo and Yugoslavia* (Lausanne: International Olympic Committee, 1987).
88. Bent Flyvbjerg and Allison Stewart, Olympic Proportions: Cost and Cost Overrun at the Olympics 1960–2012, *SSRN Electronic Journal*, (2014): 23, https://dx.doi.org/10.2139/ssrn.2238053 (accessed October 19, 2020).
89. Essex and Chalkley, 'The Winter Olympics', 48–58.
90. Claudie Blanc and Jean-Marc Eyesserie, *Official Report of the Olympic Winter Games of Albertville and Savoie* (Albertville: Comite d'Organisation des XVIes Jeux Olympiques d'Hiver d'Albertville et de la Savoie, 1992), 58, 68.
91. Francesc Manuel Munoz, 'Historic Evolution and Urban Plannning Typology of Olympic Villages,' in *Olympic Villages: A Hundred Years of Urban Planning and Shared Experiences: International Symposium on Olympic Villages*, ed. Miguel de Moragas, Montserrat Llines, and Bruce Kidd (Lausanne: Documents of the Museum, 1996), 27–52.
92. Jean -Loup Chappelet, 'Olympic Environmental Concerns and the Winter games', 1–19; Helge Mjelde *et al.*, 'Official Report of the Olympic Winter Games of Lillehammer 1994', Olympic Winter Games Organising Committee, 17 (1994); International Olympic Committee, *Sustainability Through Sport: Implementing the Olympic Movement's Agenda 21* (Lausanne: IOC Comission for Sport and Environment, 2012), 16; Jon Helge Lesjo, 'Lillehammer 1994: Planning, Figurations and the 'Green' Winter Games', *International Review for the Sociology of Sport* 35, no. 5 (2000): 282–93.
93. Essex and Chalkley, 'The Winter Olympics', 48–58.
94. Torino Olympic Committee (TOROC), *Olympic Games and Social Responsibility in Sport* (Torino: Organising Committee of the XX Winter Olympic Games, 2006), 56.
95. Ibid.
96. International Olympic Committee (IOC), 'Legacy Strategic Approach'.
97. Becca Leopkey and Milena Parent, 'Olympic Games Legacy: From General Benefits to Sustainable Long-Term Legacy', *International Journal of the History of Sport* 32, no. 5 (2015): 684–707.
98. Miranda Kiuri and Jacques Teller, 'Olympic Stadiums and Cultural Heritage: On the Nature and Status of Heritage Values in Large Sports Facilities', *International Journal of the History of Sport* 32, no. 5 (2015): 684–707.
99. Sochi 2014 Bid Committee, *Sochi 2014 Candidate City* (Sochi: Sochi 2014 Bid Committee, 2006), 17. See also Martin Müller, 'After Sochi 2014', 23–31.
100. International Olympic Committee, 'Attention Turns to Sochi 2014 Legacies', 2014, https://www.olympic.org/news/attention-turns-to-sochi-2014-legacies (accessed October 19, 2020).

101. Alexander Bryantsev, *Sochi 2014: Official Report* (Moscow: Organising Committee of the XXII Olympic Winter Games and XI Paralympic Winter Games of 2014 in Sochi, 2015); Martin Müller, 'After Sochi 2014', 23–31.
102. Kristine Toohey, 'The Sydney Olympics: Striving for Legacies: Overcoming Short-Term Disappointments and Long-Term Deficiencies', in *Olympic Legacies: Intended and Unintended-Political, Cultural, Economic, Educational,* ed. J.A. Mangan and Mark Dyreson (Abingdon: Routledge, 2010), 70–88.
103. Gold and Gold, 'Urban Segments and Event Spaces', 514–534.
104. Gratton and Preuss, 'Maximising Olympic Impacts by Building up Legacies', 1922–38.

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